AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method comprising:

saving a plurality of values for a variable after a respective plurality of encounters of a breakpoint by a program that modifies the variable;

selecting one of the plurality of values based on a condition;

determining whether to stop execution of the program at the breakpoint based on the one of the plurality of the values;

if the determining is true, stopping execution of the program at the breakpoint; and

if the determining is false, allowing the program to continue to execute.

~~stopping execution of a program at a breakpoint based on a previous value of a variable.~~

2. (Currently amended) The method of claim 1, wherein the selecting further comprises:~~further comprising:~~

finding the one of the plurality of values that is associated with a time that the breakpoint was encountered, wherein the condition specifies the time.~~saving a plurality of values of the variable after a respective plurality of encounters of the breakpoint by the program.~~

3. (Currently amended) The method of claim 2, wherein the determining ~~stopping~~ further comprises:

determining whether the condition is true using the one of the plurality of values for the variable at the time specified by the condition.~~selecting for the previous value one of the plurality of values based on a condition associated with the breakpoint.~~

4. (Currently amended) The method of claim 1, further comprising:

selecting the variable based on the condition~~a condition associated with the breakpoint~~.

5. (Original) The method of claim 2, wherein the saving further comprises:

pushing the plurality of values onto a stack associated with the breakpoint.

6. (Currently amended) An apparatus comprising:

means for saving a plurality of values of a variable after a respective plurality of encounters of a breakpoint by a program that modifies the variable;

means for selecting one of the plurality of values based on a condition;

means for determining whether to stop execution of the program at the breakpoint based on the one of the plurality of the values;

means for stopping execution of the program at the breakpoint if the determining is true; and

means for allowing the program to continue to execute if the determining is false.~~and~~

~~means for stopping execution of the program at the breakpoint based on one of the plurality of values.~~

7. (Currently amended) The apparatus of claim 6, wherein the means for selecting further comprises:~~further comprising~~:

means for finding the one of the plurality of values that is associated with a time that the breakpoint was encountered, wherein the condition specifies the time.~~means for selecting the one of the plurality of values based on a condition associated with the breakpoint.~~

8. (Currently amended) The apparatus of claim 6, further comprising:

means for selecting the variable based on the condition~~a condition associated with the breakpoint~~.

9. (Currently amended) The apparatus of ~~claim 6, further comprising~~:claim 7, wherein the means for determining further comprises:

means for determining whether the condition is true using the one of the plurality of values for the variable at the time specified by the condition.~~means for determining whether to stop execution of the program at the breakpoint based on the one of the plurality of the values.~~

10. (Original) The apparatus of claim 6, wherein the means for saving further comprises:

means for pushing the plurality of values onto a stack associated with the breakpoint.

11. (Currently amended) A ~~signal-bearing~~storage medium encoded with instructions, wherein the instructions when executed comprise:

saving a plurality of values for a variable specified by a condition after a respective plurality of encounters of a breakpoint by a program that modifies the variable;~~variable~~

selecting one of the plurality of values based on a condition;

determining whether to stop execution of the program at the breakpoint based on the one of the plurality of the values;

stopping execution of the program at the breakpoint if the determining is true; and

allowing the program to continue to execute if the determining is false.;~~and~~

~~determining whether to stop execution of the program at the breakpoint based on one of the plurality of the values.~~

12. (Currently amended) The ~~signal-bearing~~storage medium of claim 11, ~~further comprising:~~ wherein the selecting further comprises:

finding the one of the plurality of values that is associated with a time that the breakpoint was encountered, wherein the condition specifies the time.~~if the determining is true, stopping execution of the program at the breakpoint.~~

13. (Currently amended) The ~~signal-bearing~~storage medium of claim 11, further comprising:

selecting the variable~~one of the plurality of values~~ based on the condition.

14. (Currently amended) The ~~signal bearing~~storage medium of claim 11, wherein the saving further comprises:

pushing the plurality of values onto a stack associated with the breakpoint and the variable.

15. (Currently amended) The ~~signal bearing~~storage medium of claim 14, wherein the determining further comprises:

finding the one of the plurality of values in the stack; and

processing the condition using the one of the plurality of values.

16. (Currently amended) An electronic device comprising:

a processor; and

a storage device encoded with instructions, wherein the instructions when executed on the processor comprise:

saving a plurality of values for a variable specified by a condition after a respective plurality of encounters of a breakpoint by a program that modifies the variable,

selecting one of the plurality of values based on the condition,

determining whether to stop execution of the program at the breakpoint based on the one of the plurality of the values, ~~and~~

if the determining is true, stopping execution of the program at the breakpoint, and

if the determining is false, allowing the program to continue to execute.

17. (Currently amended) The electronic device of claim 16, ~~wherein the instructions further comprise:~~ wherein the selecting further comprises:

finding the one of the plurality of values that is associated with a time that the breakpoint was encountered, wherein the condition specifies the time.~~selecting the one of the plurality of values based on the condition.~~

18. (Original) The electronic device of claim 16, wherein the saving further comprises:

pushing the plurality of values onto a stack associated with the breakpoint and the variable.

19. (Original) The electronic device of claim 18, wherein the determining further comprises:

finding the one of the plurality of values in the stack; and

evaluating the condition using the one of the plurality of values.

20. (Currently amended) The electronic device of claim 17~~claim 16~~, wherein the determining further comprises:~~instructions further comprise:~~

determining whether the condition is true using the one of the plurality of values for the variable at the time specified by the condition ~~if the determining is false, allowing the program to continue to execute.~~

21. (Currently amended) A method comprising:

applying an attribute to all of a plurality of breakpoints in a breakpoint ~~group~~group;

saving a plurality of values for a variable specified by a condition after a respective plurality of encounters of one of the plurality of breakpoints by a program that modifies the variable;

selecting one of the plurality of values based on the condition;

determining whether to stop execution of the program at the one of the plurality of breakpoints based on the one of the plurality of the values;

if the determining is true, stopping execution of the program at the one of the plurality of breakpoints; and

if the determining is false, allowing the program to continue to execute.

22. (Original) The method of claim 21, wherein the attribute is a breakpoint style.

23. (Original) The method of claim 21, wherein the attribute is thread specificity of the plurality of breakpoints.

24. (Currently amended) The method of claim 21, wherein the attribute is the condition.a ~~condition.~~

25. (Original) The method of claim 21, wherein the attribute impacts whether a program halts upon encountering each of the plurality of breakpoints or continues to execute.

26. (Currently amended) An apparatus comprising:

means for applying an attribute to a plurality of breakpoints in a breakpoint group; ~~, wherein the attribute comprises data that impacts whether a program halts upon encountering the plurality of breakpoints or continues to execute.~~

means for saving a plurality of values of a variable after a respective plurality of encounters of one of the plurality of breakpoints by a program that modifies the variable;

means for selecting one of the plurality of values based on a condition;

means for determining whether to stop execution of the program at the one of the plurality of breakpoints based on the one of the plurality of the values;

means for stopping execution of the program at the one of the plurality of breakpoints if the determining is true; and

means for allowing the program to continue to execute if the determining is false.

27. (Original) The apparatus of claim 26, wherein the attribute is a breakpoint style.

28. (Original) The apparatus of claim 26, wherein the attribute is thread specificity of the plurality of breakpoints.

29. (Currently amended) The apparatus of claim 26, wherein the attribute is the condition.~~a condition.~~

30. (Original) The apparatus of claim 29, further comprising:

means for joining the condition with each of a plurality of old conditions associated with the respective plurality of breakpoints if the plurality of old conditions exist.

31. (Currently amended) A ~~signal-bearing~~storage medium encoded with instructions, wherein the instructions when executed comprise:

determining whether a plurality of old conditions exist for a plurality of respective breakpoints in a breakpoint group; and

applying a new condition to each of the plurality of breakpoints if the each of the plurality of old conditions exits;~~exists~~

saving a plurality of values for a variable specified by the new condition after a respective plurality of encounters of one of the plurality of breakpoints by a program that modifies the variable;

selecting one of the plurality of values based on the new condition;

determining whether to stop execution of the program at the one of the plurality of breakpoints based on the one of the plurality of the values;

if the determining is true, stopping execution of the program at the one of the plurality of breakpoints; and

if the determining is false, allowing the program to continue to execute.

32. (Currently amended) The ~~signal-bearing~~storage medium of claim 31, wherein the applying further comprises:

forming a conjunction of the new condition and each of the plurality of old conditions if the each of the plurality of old conditions exists and a join option is selected.

33. (Currently amended) The ~~signal-bearing~~storage medium of claim 31, wherein the applying further comprises:

replacing each of the plurality of old conditions with the new condition if the each of the plurality of old conditions exists and a replace option is selected.

34. (Currently amended) An electronic device comprising:

a processor; and

a storage device encoded with instructions, wherein the instructions when executed on the processor comprise:

applying an attribute to all of a plurality of breakpoints in a breakpoint group, ~~and~~

~~determining whether to halt a program that encounters the plurality of breakpoints based on the attribute.~~

saving a plurality of values for a variable specified by a condition after a respective plurality of encounters of one of the plurality of breakpoints by a program that modifies the variable,

selecting one of the plurality of values based on the condition,

determining whether to stop execution of the program at the one of the plurality of breakpoints based on the one of the plurality of the values,

if the determining is true, stopping execution of the program at the one of the plurality of breakpoints, and

if the determining is false, allowing the program to continue to execute.

35. (Original) The electronic device of claim 34, wherein the attribute is a breakpoint style.

36. (Original) The electronic device of claim 34, wherein the attribute is thread specificity.

37. (Currently amended) The electronic device of claim 34, wherein the attribute is the condition.~~a condition.~~

38. (Currently amended) A method comprising:

~~detecting that a program encountered a breakpoint; and~~

~~determining whether to allow the program to continue executing based on a thread.~~

saving a plurality of values for a variable specified by a condition after a respective plurality of encounters of a breakpoint by a program that modifies the variable;

selecting one of the plurality of values based on the condition;

determining whether to allow the program to continue executing at the breakpoint based on the one of the plurality of the values and based on a thread of the program;

if the determining is false, stopping execution of the program at the breakpoint; and

if the determining is true, allowing the program to continue to execute.

39. (Original) The method of claim 38, further comprising:

determining the thread, wherein the thread is associated with the breakpoint.

40. (Currently amended) The method of claim 38, ~~further comprising:~~wherein the selecting further comprises:

finding the one of the plurality of values that is associated with a time that the breakpoint was encountered, wherein the condition specifies the time.

~~if the determining is true, allowing the program to continue executing.~~

41. (Currently amended) The method of ~~claim 38,~~ claim 40, wherein the determining further comprises:~~further comprising:~~

determining whether the condition is true using the one of the plurality of values for the variable at the time specified by the condition. ~~if the determining is false, halting the program.~~

42. (Original) The method of claim 38, wherein the determining further comprises:

determining whether to allow the program to continue executing based on the thread and a user interface selection.

43. (Original) The method of claim 38, further comprising:

presenting a user interface that allows specification of exclusion and inclusion of the breakpoint on a thread basis.

44. (Currently amended) A apparatus comprising:

~~means for detecting that a program encountered a breakpoint;~~

~~means for determining a thread associated with the breakpoint; and~~

~~means for deciding whether to allow the program to continue executing based on the thread.~~

means for saving a plurality of values for a variable specified by a condition after a respective plurality of encounters of a breakpoint by a program that modifies the variable;

means for selecting one of the plurality of values based on the condition;

means for deciding whether to allow the program to continue executing at the breakpoint based on the one of the plurality of the values and based on a thread of the program associated with the breakpoint;

means for stopping execution of the program at the breakpoint if the deciding is false; and

means for allowing the program to continue to execute if the deciding is true.

45. (Currently amended) The apparatus of claim 44, wherein the means for selecting further comprises: ~~further comprising:~~

means for finding the one of the plurality of values that is associated with a time that the breakpoint was encountered, wherein the condition specifies the time.~~means for allowing the program to continue executing if the deciding is true.~~

46. (Currently amended) The apparatus of ~~claim 44,~~ claim 45, wherein the means for deciding further comprises:~~further comprising:~~

means for deciding whether the condition is true using the one of the plurality of values for the variable at the time specified by the condition.~~means for halting the program if the deciding is false.~~

47. (Original) The apparatus of claim 44, wherein the means for deciding further comprises:

means for deciding whether to allow the program to continue executing based on the thread and a user interface selection.

48. (Original) The apparatus of claim 44, further comprising:

means for presenting a user interface that allows specification of exclusion and inclusion of the breakpoint on a thread basis.

49. (Currently amended) A ~~signal bearing~~storage medium encoded with instructions, wherein the instructions when executed comprise:

~~detecting that a program encountered a breakpoint;~~

~~determining a thread associated with the breakpoint;~~

~~deciding whether to allow the program to continue executing based on the thread; and~~

~~allowing the program to continue executing if the deciding is true.~~

saving a plurality of values for a variable specified by a condition after a respective plurality of encounters of a breakpoint by a program that modifies the variable;

selecting one of the plurality of values based on the condition;

deciding whether to allow the program to continue executing at the breakpoint based on the one of the plurality of the values and based on a thread of the program associated with the breakpoint;

stopping execution of the program at the breakpoint if the deciding is false; and

allowing the program to continue to execute if the deciding is true.

50. (Currently amended) The ~~signal-bearing~~storage medium of claim 49, wherein the selecting further comprises: ~~further comprising:~~

finding the one of the plurality of values that is associated with a time that the breakpoint was encountered, wherein the condition specifies the time.~~halting the program if the deciding is false.~~

51. (Currently amended) The ~~signal-bearing~~storage medium of claim 49, wherein the deciding further comprises:

deciding whether to allow the program to continue executing based on the thread and a user interface selection.

52. (Currently amended) The ~~signal-bearing~~storage medium of claim 49, further comprising:

presenting a user interface that allows specification of exclusion and inclusion of the breakpoint on a thread basis.

53. (Currently amended) An electronic device comprising:

a processor; and

a storage device encoded with instructions, wherein the instructions when executed on the processor comprise:

saving a plurality of values for a variable specified by a condition after a respective plurality of encounters of a breakpoint by a program that modifies the variable,

selecting one of the plurality of values based on the condition,

deciding whether to allow the program to continue executing at the breakpoint based on the one of the plurality of the values and based on a thread of the program associated with the breakpoint,

stopping execution of the program at the breakpoint if the deciding is false, and

allowing the program to continue to execute if the deciding is true.~~detecting that a program encountered a breakpoint,~~

~~determining a thread associated with the breakpoint,~~

~~deciding whether to allow the program to continue executing based on the thread,~~

~~allowing the program to continue executing if the deciding is true, and~~

~~halting the program if the deciding is false.~~

54. (Original) The electronic device of claim 53, wherein the deciding further comprises:

deciding whether to allow the program to continue executing based on the thread and a user interface selection.

55. (Original) The electronic device of claim 53, wherein the instructions further comprise:

presenting a user interface that allows specification of exclusion and inclusion of the breakpoint on a thread basis.